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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,674	12/14/2001	Ralph T. Brunner	18602-06593 (P2305C)	9756

			EXAMINER
758	7590	11/05/2003	CHUNG, DANIEL J

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ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-72* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-72* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

The IDS filed 4-11-2002 fails to comply with 37 CFR 1.98(a)(2), which requires a

legible copy of each U.S. and foreign patent; each publication or that portion which

caused it to be listed; and all other information or that portion which caused it to be

listed. Specifically, All U.S patents have been considered, but copies of the five other

documents and foreign patent documents (EP 0775971) have apparently not been

provided, and thus the information referred to therein have not been considered.

Applicant must provide copies of these documents if there are to be considered as to

the merits.

Drawings

The drawings are not objected to by the Examiner.

Specification

Please review the application and correct all informalities.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over

O'Connor et al (5,638,499) in view of Randall (4,780,709), and further in view of Satoh

(5,499,327).

Regarding claim 1, O'Connor et al discloses that the a computer-implemented

method (Fig 21) for combining at least two overlapping layers to render an image, the

image containing a plurality of image pixels, each overlapping layer containing a

plurality of layer pixels, each layer pixel corresponding to one of the image pixels, (See

Abstract, col 14 line 20-52) the method comprising: a') defining a tile, the tile comprising

a subset of the image pixels delimited according to an area of overlap among a set of at

least two layers, so that a first portion of the image lies within the tile and a second

portion of the image lies outside the tile; (See Abstract, Fig 21, col 14 line 20-52) and a)

processing the first portion of the image distinctly from the second portion of the image

by, for at least one image pixel in the defined tile (See Abstract, Fig 14, Fig 16, Fig 21,

Fig 22, Fig 23, col 7 line 46-53, col 14 line 20-52, col 14 line 53-col 15 line 23): a.1)

initializing an accumulator color value (MOVE, 2); a.2) selecting one of the layers in the

set of at least two layers, the selected layer having a layer pixel corresponding to the

image pixel, the layer pixel having a color value (SET, 1); a.3) compositing the color

value of the layer pixel with the accumulator color value (COMBINE, 6); a.4) storing the

result of a.3) in the accumulator (COMBINE, 6); a.5) determining whether layer pixels

for any remaining layers in the set of at least two layers should be processed (TEST, 4);

a.6) responsive to a.5) indicating that layer pixels for any remaining layers should be

processed, repeating a.2) to a.6) (TEST, 4); and a.7) outputting the accumulator color

value (CALCULATE, 7).

O'Connor et al does not specifically discloses that subdividing the image as "tile."

However, Randall teaches that dividing the screen into a plurality of tiles and horizontal

strips, thereby any shape of image on the screen (i.e. 11-13) can be represented by

combining the tiles and strips. (See Abstract, Fig 1, Fig 2, col 1 line 55-col 2 line 5) It

would have been obvious to one skilled in the art to incorporate the teaching of Randall

into the teaching of O'Connor et al, in order to produce faster final composed image with

easy manner, as using "tile" structure is also advantageously desirable in the teaching

of O'Connor et al for performing image composition with multiple layers with minimized

hardware (i.e. less memory, as tiles can be treated as one group of embodiment in

memory) at faster processing time (i.e. eliminate repetitious calculations for invisible

tiles).

Also, O'Connor et al does not explicitly disclose that "defining a tile, which a

subset of the image pixels delimited according to an area of overlap..." However, such

limitation [i.e. overlapped tile regions] is shown in the teaching of Satoh. (See [r'] in Fig

13-18, [a'] in Fig 26-29) It would have been obvious to one skilled in the art to

incorporate the teaching of Satoh into the teaching of O'Connor et al [i.e. the overlapped

portions are separately calculated/executed with other regions of windows/layers], in

order to eliminate the unnecessary calculation [i.e. repetitious calculations on

overlapped regions] for composing the final image, as such improvement is also

desirable in the teaching of O'Connor et al for manipulating overlapped portion of a

plurality layers, thereby performing image composition with multiple layers at faster

processing time without complex calculation.

Regarding claim 2, O'Connor et al discloses that wherein each layer pixel has an

opacity value, and wherein (See Abstract, Fig 14, Fig 16, Fig 21, Fig 22, Fig 23, col 7

line 46-53, col 14 line 20-52, col 14 line 53-col 15 line 23): a.1) further comprises

initializing an accumulator opacity value (MOVE, 2); a.3) further comprises compositing

the opacity value of the layer pixel with the accumulator opacity value (COMBINE, 6);

and a.5) comprises determining whether the accumulator opacity value indicates full

opacity (TEST, 5).

Regarding claim 3, O'Connor et al discloses that wherein a.2) comprises

selecting a topmost remaining layer in the set of at least two layers. (See col 7 lien 46-

53, col 9 line 27-39, col 18 line 6-18)

Regarding claim 4, O'Connor et al discloses that wherein a.7) comprises

outputting the accumulator value to a frame buffer. (See Fig 16, col 14 line 20-52)

Regarding claim 5, O'Connor et al discloses that further comprising: b) displaying the image. (See Fig 16, col 14 line 20-52)

Regarding claim 6, O'Connor et al discloses that further comprising: b) repeating a) for each image pixel in the defined tile. (See Abstract, col 14 line 20-50, col 14 line 53-col 15 line 23)

Regarding claim 7, O'Connor et al discloses that wherein a) comprises performing a.1) through a.7) for at least two image pixels concurrently. (See Abstract, col 11 line 49-52, col 14 line 20-50, col 14 line 53-col 15 line 23)

Regarding claim 8, O'Connor et al discloses that further comprising: b) concurrently with a), for a second image pixel in the defined tile (See Abstract, Fig 14, Fig 16, Fig 21, Fig 22, Fig 23, col 7 line 46-53, col 11 lien 34-52, col 14 line 20-52, col 14 line 53-col 15 line 23): b.1) initializing a second accumulator color value (MOVE, 2); b.2) selecting one of the layers in the set of at least two layers, the selected layer having a second layer pixel corresponding to the second image pixel, the second layer pixel having a color value (SET, 1); b.3) compositing the color value of the second layer pixel with the second accumulator color value (COMBINE, 6); b.4) storing the result of b.3) in the second accumulator (COMBINE, 6); b.5) determining whether layer pixels for any remaining layers in the set of at least two layers should be processed (TEST, 4); b.6) responsive to b.5) indicating that layer pixels for any remaining layers should be

processed, repeating b.2) to b.6) (TEST, 4); and b.7) outputting the second accumulator

color value (CALCULATE, 7).

Regarding claim 9, O'Connor et al discloses that wherein at least one of the

layers in the set of at least two layers is non-rectangular. (See Fig 4, Fig 22)

Regarding claim 10, O'Connor et al discloses that wherein at least one pixel of at

least one of the layers in the set of at least two layers is transparent, and wherein a.3)

comprises: a.3.1) responsive to the layer pixel being transparent, retaining the

accumulator color value; and a.3.2) responsive to the layer pixel not being transparent,

compositing the color value of the layer pixel with the accumulator color value. (See

steps 5,6,7 of Fig 21)

Regarding claim 11, O'Connor et al discloses that further comprising: b')

repeating a') and a) for at least one second defined tile. (See Abstract, Fig 21)

Regarding claim 12, O'Connor et al discloses that wherein each layer comprises

a window, and wherein the image comprises a display for a windowing system. (See Fig

14, Fig 15, Fig 22, Fig 23; Also See Fig 13-18 in Satoh)

Regarding claim 13, refer to the discussion for the claim 1 hereinabove,

O'Connor et al further discloses that wherein a first one of the layers in the set overlaps

a second one of the layers in the set, and wherein each layer comprises bounds defined by edges, and wherein at least one edge of the first layer lies within the bounds of the second layer, and wherein a') comprises: subdividing the second layer along a line corresponding to an extension of the at least one edge of the first layer that lies within the bounds of the second layer. (See Abstract, Fig 14, Fig 16, Fig 21, Fig 22, Fig 23, col 7 line 46-53, col 11 lien 34-52, col 14 line 20-52, col 14 line 53-col 15 line 23; Also See Fig 1, Fig 2, in Randall)

Regarding claim 14, O'Connor et al discloses that wherein: a.2) comprises selecting one of the layers in the set of at least two layers, the selected layer having a layer pixel corresponding to the image pixel, the layer pixel having a color value and an alpha value; and a.3) comprises compositing the color value of the layer pixel with the accumulator color value, using the alpha value. (See Fig 2, Fig 14, Fig 21, Fig 23)

Regarding claims 15-28, claims 15-28 are similar in scope to the claims 1-14, and thus the rejections to claims 1-14 hereinabove are also applicable to claims 15-28.

Regarding claims 29-42, claims 29-42 are similar in scope to the claims 1-14, and thus the rejections to claims 1-14 hereinabove are also applicable to claims 29-42.

Regarding claims 43-56, claims 43-56 are similar in scope to the claims 1-14, and thus the rejections to claims 1-14 hereinabove are also applicable to claims 43-56.

Regarding claim 57, O'Connor et al discloses that the claimed feature of an image containing a plurality of layers, wherein a first one of the layers overlaps a second one of the layers, and wherein each layer comprises bounds defined by edges, and wherein at least one edge of the first layer lies within the bounds of the second layer layers, a method of subdividing tiles, (See Abstract, Fig 1, Fig 2, Fig 4, Fig 21-23) comprising: subdividing the second layer along a straight line corresponding to an extension of the at least one edge of the first layer that lies within the bounds of the second layer, to obtain two tile subdivisions; and storing, in a tile list, a representation of at least a subset of the obtained file subdivisions. (See Abstract, Fig 1, Fig 2, Fig 4, Fig 21-23)

O'Connor et al does not specifically discloses that subdividing the image as "tile." However, Randall teaches the claimed feature of invention. (See Abstract, Fig 1, Fig 2, col 1 line 55-col 2 line 5) It would have been obvious to one skilled in the art to incorporate the teaching of Randall into the teaching of O'Connor et al, in order to produce faster final composed image with easy manner, as using "tile" structure is also advantageously desirable in the teaching of O'Connor et al for performing image composition with multiple layers with minimized hardware (i.e. less memory) at faster processing time (i.e. eliminate repetitious calculations).

Regarding claim 58, refer to the discussion for the claim 57 hereinabove, Randall

further discloses that repeating the subdividing step using at least one of the obtained

file subdivisions. (See Abstract, Fig 1, Fig 2, col 1 line 55-col 2 line 5)

Regarding claim 59, refer to the discussion for the claim 57 hereinabove, Randall

further discloses that joining at least two adjacent file subdivisions in the tile list. (See

Abstract, Fig 1, Fig 2, col 1 line 55-col 2 line 5)

Regarding claim 60, refer to the discussion for the claim 57 hereinabove, Randall

further discloses that responsive to at least two adjacent tile subdivisions including

portions of the same set of identical layers as one another, joining the at least two

adjacent tile subdivisions in the tile list. (See Abstract, Fig 1, Fig 2, col 1 line 55-col 2

line 5)

Regarding claims 61-72, claims 61-72 are similar in scope to the claims 57-60,

and thus the rejections to claims 57-60 hereinabove are also applicable to claims 61-72.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Daniel J. Chung whose

telephone number is (703) 306-3419. He can normally be reached Monday-Thursday and alternate Fridays from 7:30am- 5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael, Razavi, can be reached at (703) 305-4713.

Any response to this action should be mailed to:

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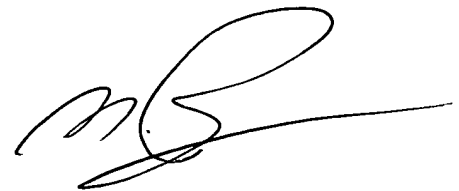
Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

djc
October 27, 2003

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600